

Serial No. 10/052,207
Page 16 of 18

REMARKS

Claims 1-45 are pending in the application. Claims 14-32, 37-39, and 44-45 have been withdrawn from consideration. Applicant amends claims 1, 5, 7, 11, 33-36, and 40-43 for clarification, and amends claim 2 for a minor correction. No new matter has been added.

Claims 1-13 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention.

The Examiner objected to the terms "being operable" and "operable" in the rejected claims for being optional language, and objected to the "space-time encoder means" recited in claim 2 for lack of antecedent basis. Applicant amends the claims to correct the objected-to language, and respectfully requests that the Examiner withdraw the § 112, ¶ 2 rejection.

Claims 1-7, 10-11, 33-36, and 40-43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,317,411 to Whinnett et al. in view of U.S. Patent No. 6,301,238 to Hagerman et al. Applicant amends 1, 5, 7, 11, 33-36, and 40-43 in a good faith effort to clarify the invention as distinguished from the cited references, and respectfully traverse the rejection.

The Examiner maintained that a combination of Whinnett et al. and Hagerman et al. suggesting a plurality of beamformers for respective transmission beams would have been obvious to one skilled in the art.

The Examiner conceded that Hagerman et al. only disclose a single beamformer, and relied upon Whinnett et al. as a combining reference that allegedly suggests the use of a plurality of beamformers to support a plurality of directional paths. The cited portions of Whinnett et al. only include, however, description of different symbols of a signal being input to different space-time coders. Please see, e.g., col. 5, line 50 to col. 6, line 6 of Whinnett et al.

84204512_1

Serial No. 10/052,207

Page 17 of 18

Thus, even assuming, arguendo, that it would have been obvious to one skilled in the art at the time the claimed invention was made to combine Hagerman et al. and Whinnett et al., such a combination would have, at most, suggested forming directional beams for divided symbols of a data signal, each beam representing respective divided symbols of the data signal—as illustrated in Fig. 5 and described in col. 5, line 50 to col. 6, line 6 of Whinnett et al. Neither reference discloses or suggests the claimed feature of a plurality of beamformers each receiving a respective transmission signal having respectively different space-time coding to the same data signal. And therefore, a combination of the references would still have failed to disclose or suggest such a feature.

In other words, even assuming, arguendo, that it would have been obvious to one skilled in the art at the time the claimed invention was made to combine Hagerman et al. and Whinnett et al., such a combination would still have failed to disclose or suggest,

“[t]ransmitting apparatus which transmits a data signal to a receiving apparatus via at least two different transmission paths, comprising:

an antenna array;

a transmitter array connected to the antenna array; and

a plurality of beamformers connected to the transmitter array, each beam former being configured to receive a respective transmission signal representing a same data signal and to modify the respective transmission signal, such that the antenna array produces a plurality of directional transmission beams carrying respective transmission signals which are transmitted via different transmission paths to the receiving apparatus; and

a space-time encoder which applies respectively different space-time coding to the same data signal thereby to produce space-time encoded transmission signals for transmission by the respective transmission beams,” as recited in claim 1. (Emphasis added)

Advantageously, the claimed invention provides for the reduction of interference between transmission signals and, thus, the improvement of transmission techniques where signals having

84204512_1

Serial No. 10/052,207

Page 18 of 18

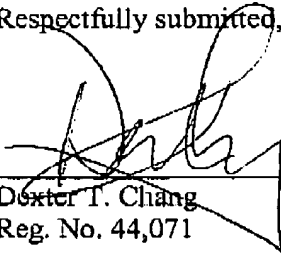
the same data content can be transmitted to a mobile unit via different transmission paths and recombined to increase the quality of reception.

Accordingly, Applicant respectfully submits the claim 1, together with claims 2-4 dependent therefrom, is patentable over Whinnett et al. and Hagerman et al., separately and in combination, for at least the foregoing reasons. Claims 5, 7, 11, 33-36, and 40-43 incorporate features that correspond to those of claim 1 cited above, and are, therefore, together with claims 6, 8-10, 12-13 dependent therefrom, respectively, patentable over the cited references for at least the same reasons.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,



Dexter T. Chang
Reg. No. 44,071

CUSTOMER NUMBER 026304
Telephone: (212) 940-6384
Fax: (212) 940-8986 or 8987
Docket No.: 100794-00152 (FUJL 19.346)
DTC:bf

84204512_1